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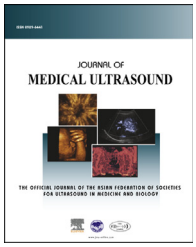

BRIEF COMMUNICATION

Anal and Rectal Endosonography in Clinical Practice: What is the Opinion of Clinicians Regarding Current Indication?

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Anal (EcoA) and rectal endosonography (EcoEAR) is a useful test in the evaluation of patients with anorectal pathology. However, there is no clear consensus on its indications. The aim of this study was to determine the opinion of clinicians regarding the current indications and usefulness of this diagnostic test in daily clinical practice. A cross-sectional observational study was conducted using a survey sent to the services of General surgery in a specific area of Spain. The clinical usefulness of the test was evaluated using an analog scale from 0 (lowest value) to 10 (maximum utility) for each pathology. Of the 47 hospitals, 23 responded to the questionnaire (48.9%). The average number of ultrasounds performed in these centers was 217 per year (standard deviation: 140.1, range 73–450) during the last 3 years. The most common indications for this test were: rectal tumor (85%), anal fistula (80%), and fecal incontinence (70%). This test was suggested more, depending on availability in the hospital itself. In conclusion, anal and rectal endosonography remains a very useful diagnostic clinical test in the opinion of clinicians in general and digestive surgery, especially in the evaluation of patients with anal fistula, fecal incontinence, or rectal tumors.

Conflicts of interest: The authors have no conflicts of interest relevant to this article.

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Introduction

Anal (EcoA) and rectal endosonography (EcoEAR) is an imaging technique, that since its description in 1989, has become a great clinical tool in the evaluation of patients with anorectal pathology [1]. After several years of experience with this test, we know how to interpret normal anatomy and pathologic findings (Fig. 1) [2,3]. Despite being a real-time radiological tool, it has been demonstrated the adequate correlation between observers [4].

After almost 25 years of using EcoA/EcoEAR in clinical practice, the main indications are: evaluation of patients with fecal incontinence (Fig. 2), anal fistula, and rectal tumors (Fig. 3). However, there are other less common indications in which its clinical usefulness has also been demonstrated; the diagnosis of anal pain, when perianal abscess was suspected, or in the study of patients with pathology of the pelvic floor, such as rectocele or rectal prolapse [5—7].

Despite the fact that there is some consensus in the description of the pathological findings in these digestive pathologies, there is a little consensus on its use in daily clinical practice among clinicians.

The aim of this study was to analyze the results of a survey of clinicians in general and digestive surgery, to determine their opinion about indications in daily clinical practice and the usefulness of EcoA/EcoEAR in daily clinical practice.

Material and methods

A cross-sectional observational study was conducted using a standardized survey sent to all services of general and digestive surgery hospitals attending public health of Catalunya (Spain). The population of this part of Spain comprises 7 million people; 47 hospitals are included.

The anonymous survey was sent via email. There were two reminders 1 month and 2 months after first sending, to ensure the highest possible response rate.

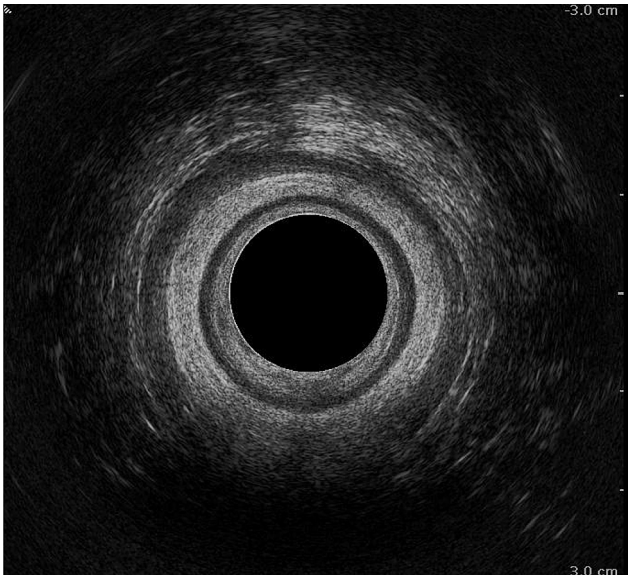

Fig. 1 Imaging of normal findings in anal ultrasound.

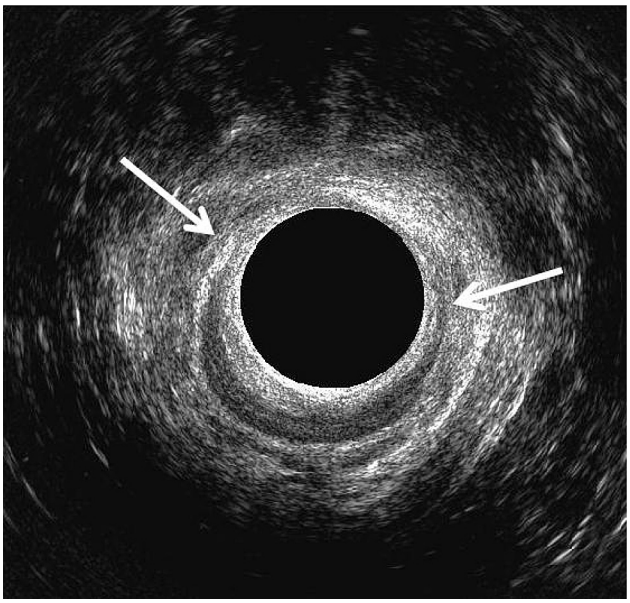

Fig. 2 Anal endosonography imaging in a patient with fecal incontinence showing internal anal sphincter injury (arrows).

Variables studied

The survey was divided into three main sections. The first section reflected the characteristics of the center (number of beds, type of hospital) and number of EcoA/EcoEAR performed in the last 3 years. A second part comprised the technical aspects of EcoA/EcoEAR (preparation of test and type of equipment, 3D technology). Finally, the opinion about clinical indications of EcoA/EcoEAR in daily clinical practice was investigated. To quantify this last issue, an analog scale from 0 to 10 was designed, where clinicians were encouraged to rate the utility of EcoA/EcoEAR in each

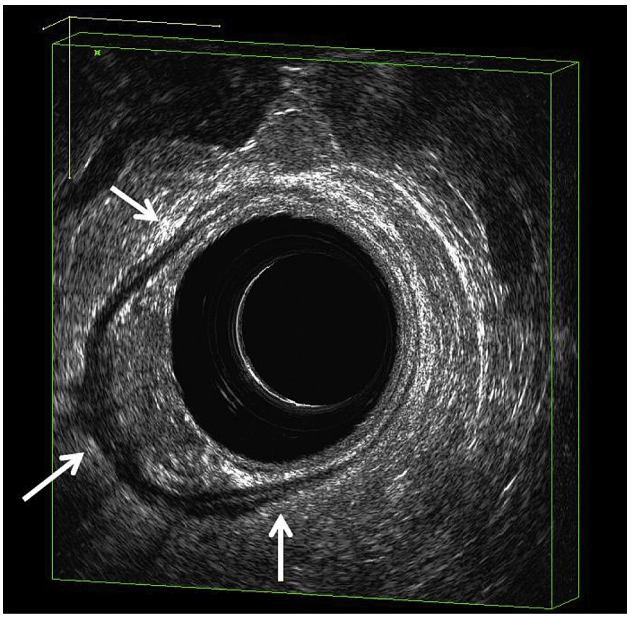

Fig. 3 3D rectal endosonography imaging showing the presence of a rectal tumor (arrows).

Table 1 Indications of anal and rectal endosonography (EcoA/EcoEAR) in percentage of each diagnosis according to the availability of this test in each hospital.

	Clinicians with EcoA/EcoEAR in their hospital	Clinicians with no availability of EcoA/EcoEAR	p[a]
Anal fistula	100%	50%	0.014
Fecal incontinence	83.3%	50%	0.161
Hemorrhoidal disease	16.7%	25%	1.0
Anal pain	41.7%	0%	0.055
Anal fissure	16.7%	25%	1.0
Rectocele	41.7%	25%	0.642
Rectal prolapse	16.7%	12.5%	1.0
Rectal tumor	75%	100%	0.242

[a] Chi-square test.

indication, 0 being the minimum value or no use and 10 being the maximum value possible.

Statistical analysis

Data were collected prospectively in a database specially designed for the study. Quantitative variables are presented with absolute numbers, the mean or median and standard deviation (SD) and/or the range. Quantitative variables were compared using a non-parametric test (U Mann-Whitney test). Differences were considered statistically significant when the two-sided p value was <0.05. Statistical analysis was performed using SPSS™ version 17.0 (SPSS IBM Co., NY, USA).

Results

Of the 47 hospitals included, 23 responded to the survey (48.9%): eight (34.7%) were university hospitals, seven were district hospitals (30.4%), and eight were general hospitals (34.7%). Of the respondents, 13 (56%) performed EcoA/EcoEAR in their hospital on a regular basis.

EcoA/EcoEAR technique

In all hospitals that perform EcoEAR, it is carried out by general and digestive surgery clinicians with previous training in national centers (61.5%), in international centers (15.3%), and the remaining, in both types. An average of 217 EcoA/EcoEAR tests per year (SD = 140.1, range = 73—450) were performed in the past 3 years (2009, 2010, and 2011) in these centers. The equipment in all cases included a 360° anal probe, and only 21.7% had 3D technology. Patients received preparation the day before or the day of the test (for example cleansing enemas) in 100% of cases undergoing anal ultrasound and in 46.1% of cases undergoing rectal endosonography.

Opinion of clinicians

Table 1 shows the indications in which EcoA/EcoEAR was preferred by clinicians, according to availability in each hospital. The most frequent clinical indications for the test were: rectal tumors (85%), to assess anal fistula (80%), and for patients with fecal incontinence (70%).

The availability of EcoA/EcoEAR determined its indications. In cases of anal fistula, the results were statistically significant ($p = 0.014$).

The responses regarding the clinical usefulness of EcoA/EcoEAR in clinical practice using the analog scale ranging from 1 to 10, in the evaluation of each colorectal disease, are shown in Table 2. The three conditions in which it was most useful were considered to be: evaluation of anal fistula (median = 10, range = 6—10), fecal incontinence (median = 10, range 8 = 10) and rectal tumors (median = 10, range = 6—10).

Discussion

Nowadays, despite advances in imaging techniques, EcoA/EcoEAR is a routine examination in clinical practice to assess anorectal pathology. The technique performed mostly by clinicians was considered to be a useful clinical tool to assess anorectal diseases by specialists in general and digestive surgery.

In the study design, we conducted a survey of clinicians from all acute care hospitals in a specific area of Spain. The response rate was 48.9% and only a little over half of the responders (56%) performed EcoA/EcoEAR in their hospital. *A priori*, this looks like a low response rate, but we have to consider that the response has ranged from 13% to 68% in

Table 2 Opinion of utility of anal (EcoA) and rectal endosonography (EcoEAR) using an analogue scale from 0 to 10 in each indication, 0 being the minimum value or no use and 10 being the maximum value possible.

	Utility of EcoA/EcoEAR[a]
Anal fistula	10 (6—10)
Fecal incontinence	10 (8—10)
Hemorrhoidal disease	0 (0—5)
Anal pain	5.5 (2—9)
Anal fissure	2.50 (0—6)
Rectocele	7 (0—10)
Rectal prolapse	6 (0—10)
Rectal tumor	10 (6—10)

[a] Data are medians and range in parenthesis.

other studies [8]. Also of interest is the asymmetrical distribution of opinion data sent by clinicians.

All clinicians used a 360° anal probe and while there is consensus on the lack of need for bowel preparation before anal ultrasound in the case of rectal ultrasound, there is greater variability [7]. In fact, there are no data in the literature showing an advantage of preparing patients with enemas before anal ultrasound practice, and it is considered that it would be uncomfortable for the patient. In cases of rectal ultrasound, it is recommended that the presence of stool in the rectal ampulla is avoided, in order to improve the view of the rectal wall [9].

There is a high prevalence of fecal incontinence in the general population, especially in women with sphincter injury during childbirth [10]. To precisely assess the presence of these lesions, EcoA has proven to be a valuable diagnostic test [11,12]. Although some studies have attempted to evaluate the diagnostic accuracy of other techniques, such as MRI, they have not yet been shown to be better, as was demonstrated from expert opinion in the present survey [13]. It is for that reason that EcoA is the preferred test used by clinicians in these patients.

EcoA is a diagnostic tool used in many cases to describe anal fistula. Despite the fact that most fistulas are intersphincteric, the clinical value of this test is the recognition of a complex fistula. Both the internal opening, the fistula main track including sphincter involving or the presence of secondary fistula tracks are details of an anal fistula that will determine the surgical technique. High sensitivity and specificity have been demonstrated using EcoA in anal fistula assessment [14]. Although MRI has recently shown encouraging results in this pathology, the results are not definitive, as stated by clinicians [15].

Some time ago, EcoEAR was the test of choice for staging anal and rectal tumors [2]. The technique enables evaluation of the infiltration of the wall by the tumor and the presence of malignant lymph nodes. Recent studies have analyzed the role of MRI using meta-analysis and its superiority has been described, with enough scientific evidence [9,16,17]. However, it is interesting that some clinicians frequently indicated EcoEAR for this disease. This is probably because it is considered as a good first test. In fact, EcoEAR are very useful in the evaluation of nonadvanced rectal tumors that will be resected by local resection [18]. In the future, all tumors will probably be assessed by MRI rather than EcoEAR.

There are other conditions that can be studied using EcoA. These included anal pain and pelvic floor disease. However, there is less of a consensus for its current role. It is hypothesized that these indications are rare and specific to referred centers [5].

This study is important in determining the opinion of clinicians regarding EcoA/EcoEAR indications in daily practice. There is only one similar study, conducted in Italy by the Italian Society of Colorectal Surgery [7]. However, the study also has some limitations. First, it was performed using a survey in which the response rate was 45%. In addition, as the survey was anonymous, only more motivated clinicians answered the questions, and there is therefore a certain selection bias.

In conclusion, EcoA/EcoEAR is still a very useful diagnostic clinical test in the opinion of clinicians, especially in the evaluation of patients with anal fistula, fecal incontinence, or rectal tumors.

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